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# Further information on the type specimens of *Onycocaris aualitica* (Nobili) (Decapoda Natantia, Pontoniinae)

by A. J. Bruce *

**Résumé.** — Les spécimens types de *Coralliocaris* (*Onycocaris*) *aualitica* Nobili, 1904, ont été réexaminés. Des détails morphologiques supplémentaires sont décrits et illustrés et quelques erreurs dans la description originale sont corrigées. En particulier, nous confirmons que l'exopodite de l'uropode a un bord latéral entier et que l'angle disto-latéral du scaphocérite a normalement une dent, petite mais bien marquée. Ces corrections permettent de juger d'une façon plus précise la position systématique de ces spécimens, maintenant placés dans le genre *Onycocaris* Nobili, dont ils sont l'espèce type. *Onycocaris aualitica* ressemble beaucoup à *Onycocaris oligodentata* Fujino et Miyake et nous concluons que cette espèce est probablement synonyme de *Onycocaris aualitica* Nobili.

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In 1904, G. Nobili published a preliminary description of a p air of shrimps collected by Coutière from the neighbourhood of Djibouti in the Red Sea. The specimens were named *Coralliocaris* (*Onycocaris*) *aualitica* and were placed in the newly designated subgenus *Onycocaris*. In 1906, Nobili provided a more detailed description, with illustrations of the second pereiopod and the dactylus and the end of the propod of an ambulatory pereiopod. In this description he reported that the lateral borders of the exopods were finely denticulated, a feature that has resulted in considerable uncertainty as to the proper systematic position of the species.

Kemp, in 1922, raised the subgenus *Onycocaris* to generic status, and included the two species *O. aualitica* and *O. rhodope* (Nobili). The latter has been subsequently transferred to the genus *Periclimenaeus* (Holthuis, 1952). In his report Kemp remarked that the proper status of *Onycocaris* could not be assessed due to lack of adequate information on its morphological characteristics. Holthuis (1952) follows Kemp in his treatment of Nobili's species. More recently, Fujino and Miyake (1969), in their report upon the genus *Onycocaris*, preferred to omit *O. aualitica* from their key to the species now referred to this genus.

There has been no material referred to *Onycocaris aualitica* since the publication of the original description. Ten species are at present placed in the genus *Onycocaris*, all from the Indo-West-Pacific region, and, where the hosts are known, all found in association with sponges.

Due to the kindness of Dr J. Forest, I have been able to reexamine the type specimens

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of *Coralliocaris* (*Onycocaris*) *aualitica* Nobili. This material has been preserved in the collections of the Muséum national d'Histoire naturelle, Paris. The specimens are in a rather fragile state. They are at present preserved in alcohol but appear to have been originally preserved dried and pinned. The specimens have undergone some distortion and many appendages are detached, but enough have been preserved to confirm the general accuracy of Nobili's account of the species and to provide further information upon its morphology, and at the same time to clarify some of the difficulties experienced by earlier workers.

### **Onycocaris aualitica** (Nobili)

*Coralliocaris* (*Onycocaris*) *aualitica*, Nobili, 1904, *Bull. Mus. Hist. nat., Paris*, 1re sér., **10** : 233 (1906) ; *Ann. Sci. nat. Zool.*, **4** (9) : 60-61, pl. 3, fig. 3. — Borradaile, 1917, *Trans. Linn. Soc. Lond.* (*Zool.*), **17** (2) : 385.

*Onycocaris aualitica*, Kemp, 1922, *Rec. Indian Mus.*, **24** : 278. — Holthuis, 1952, *Siboga Exped. Mon.*, 39a[10] : 14, 147.

? *Onycocaris oligodentata*, Fujino and Miyake, 1969., *J. Fac. Agric., Kyushu Univ.*, 15 (4) : 415-422, figs. 7, 8 d-f, 9 d-f.

Material examined : 1 ♂, 1 ovig. ♀. Djibouti, Red Sea. Coll. M. Coutière.

### Description

*Female*

The specimen agrees generally with the descriptions given by Nobili. The rostrum is very short, acute, and slightly upturned, and reaching approximately to the level of the tip of the inferior orbital angle. The eyes are not in a natural position and would probably only slightly exceed the tip of the rostrum. The inferior orbital is produced and broadly acute. The antero-lateral angle of the carapace is also broadly produced. The cornea of the eye is globular and the stalk does not appear to have been particularly quadrate.

The antennular peduncle has the basal segment with a rounded disto-lateral angle, lacking any distinct spine. The intermediate and distal segments present no special features. The basicerite of the antennular peduncle is obscured from view but the carpocerite is long, slender and slightly compressed. The scaphocerite has the lateral border feebly convex. The disto-lateral angle is rounded and lacks a spine. The lamella is about twice as long as broad.

The mouth parts have not been examined.

The first, second and fourth pereiopods are still attached to the body and have not been removed. The first and fourth pereiopods appear to be similar to those of the male specimen. Both second pereiopods are present. The chelae are similar but slightly unequal in size. The larger right chela has the palm strongly compressed, about twice as long as high. The dactylus is equal to 0.4 times the length of the palm and is also strongly compressed with a strongly hooked tip. The cutting edge hears two small subacute teeth on the proximal half, the distal tooth slightly larger than the proximal. The distal half of the cutting edge bears a row of ten small, subequal, rounded teeth. Three groups of long setae arise from the lateral aspect of the dactylus above this row of small teeth. The




Fig. 1. — *Onycocaris aualitica* (Nobili) ♀, paratecto-type.
A, anterior carapace, antennae and eyes, dorsal view ; B, anterior carapace, antennae and eyes, lateral view ; C, scaphocerite ; D, sixth abdominal segment, fifth pair of pleopods, telson and uropods ; E, right second pereiopod ; F, chela of left second pereiopod ; G, ovum.

cutting edge of the fixed finger bears two small blunt teeth on the proximal two fifths. The central fifth bears a single larger, isolated tooth, while the distal two thirds of the cutting edge is entire. The disto-lateral aspect of the fixed finger bears a well developed laminar flange, with a small acute tooth distally. The dactylus, when closed, fits into the space between this flange and the tip of the fixed finger. The carpus shows no special features. It is short, about 0.28 of the length of the chela, broadly expanded distally and unarmed. The merus is robust, dilated centrally, 0.4 times the length of the chela and with the disto-ventral angle produced to a small acute tooth. The ischium is short and stout, equal to about 0.4 of the merus and with a large acute disto-ventral tooth. The basis is robust, subequal to the ischium and unarmed.

The chela of the left second pereiopod is slightly smaller than the right (25 : 27) and more slender, with relatively slightly longer fingers. The dentition of the fingers is generally similar to the major chela, but the proximal part of the cutting edge of the fixed finger bears five small acute distal teeth.

The telson is 1.75 times longer than broad, tapering with feebly convex sides. Two pairs of marginal dorsal spines are present at 0.45 and 0.75 of the telson length. The dorsal spines are about half the length of the intermediate telson spines. The posterior margin of the telson is broadly convex and bears three pairs of spines. The lateral pair are robust, equal to about 0.13 of the telson length. The submedian spines are slightly shorter than the intermediate spines and are more slender.

The basipodite of the uropod is unarmed. The exopod is broad and exceeds the pos terior margin of the telson. The lateral border is straight or feebly convex, entire, with no trace of denticulations, terminating distally in a small acute tooth, with a longer mobile spine medially. The endopod is also broad, and slightly exceeds the exopod.

The greater diameter of the preserved ova is approximately 0.45 mm.

*Male*

Distinctly smaller than the female, and less robust.

The rostrum is short, acute, generally similar to the female, and reaching to abou the middle of the eyestalk. There appears to be no distinct inferior orbital angle and the antero-lateral angle of the carapace is also not produced.

The eyes are short and stout. The cornea is less than hemispherical and antero-lateral in situation. The antero-median angle of the eyestalk is subquadrate.

The antennular peduncle is similar to the female, except that the disto-lateral angle of the basal segment bears a distinct tooth on each side.

The antennal basicerite is unarmed. The carpocerite is compressed. The scaphocerite resembles that of the female, except that a distinct disto-lateral tooth is present on each side.

A detached first pereiopod is present. The palm of the chela is subcylindrical, tapering slightly distally, about 4.3 times longer than wide. The fingers are compressed, about 0.28 times the length of the palm, with entire cutting edges. The carpus is slender, subcylindrical, slightly narrowed proximally and equal to about 1.4 times the length of the chela. The merus is slightly longer than the carpus, equal to 1.5 times the length of the

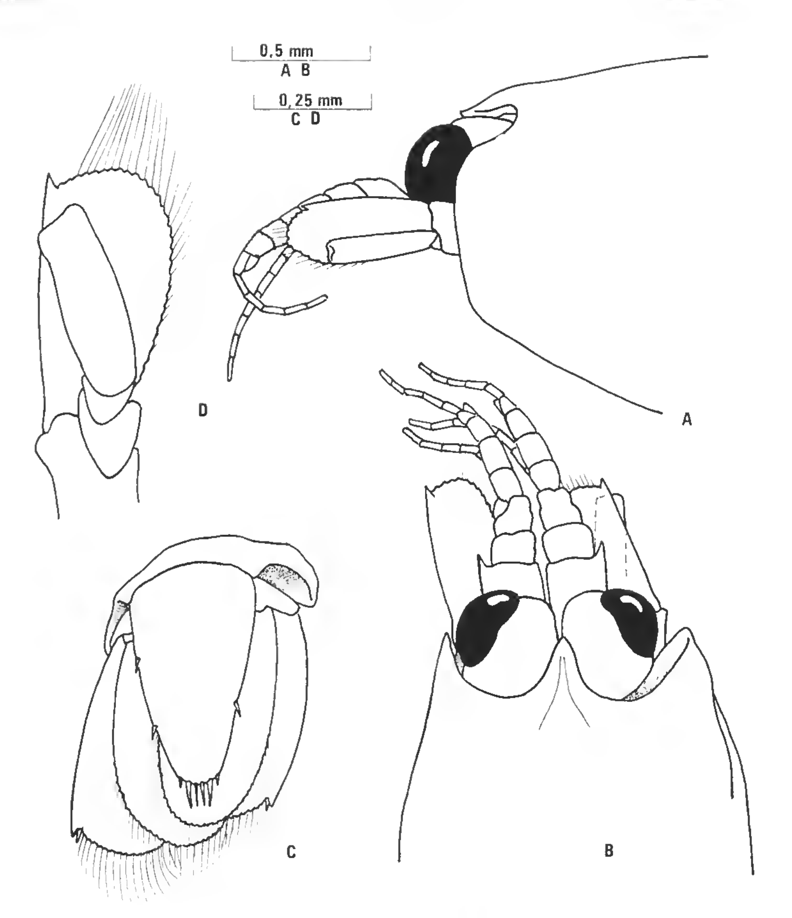



Fig. 2. — *Onycocaris aualitica* (Nobili) ♂, lectotype.
A, anterior carapace, antennae and eyes, dorsal view ; B, anterior carapace, antennae and eyes, lateral view ; C, sixth abdominal segment, telson and uropods ; D, scaphocerite.

chela. The merus is distinctly shorter than the carpus and merus, about 1.2 times the length of the chela, and is slightly broadened. All segments are unarmed.

The second pereiopod is closely similar to that of the female. The larger chela has three acute teeth on the cutting edge of the fixed finger. In the smaller chela there are two blunt teeth. On the dactylus of the smaller chela the proximal teeth are similarly less acute. On the distal third of the cutting edge six low rounded teeth are present. The disto-lateral flange on the fixed finger is well developed and bears three acute teeth distally.

The carpus, merus and ischium are similar to the female, with a small disto-ventral tooth on the merus, and a large acute disto-ventral tooth on the ischium.

Some detached ambulatory pereiopods are present. The (?) third pereiopod is robust.... The dactylus is stout, about 1.6 times longer than its basal width, and with a distinct

slender curved unguis. A well developed, obliquely truncated accessory tooth is present, with four small acute teeth along its distal margin. The proximal ventral border of the unguis bears a series of five small spinules, which increases in size distally. The ventral border, proximal to the accessory tooth is distinctly convex but without any trace of a basal process, and bears a series of five small acute teeth, of which the central teeth are the largest. The propod is 3.5 times longer than wide. The disto-ventral angle is provided with two long simple spines and the ventral border is armed with four shorter spines. The

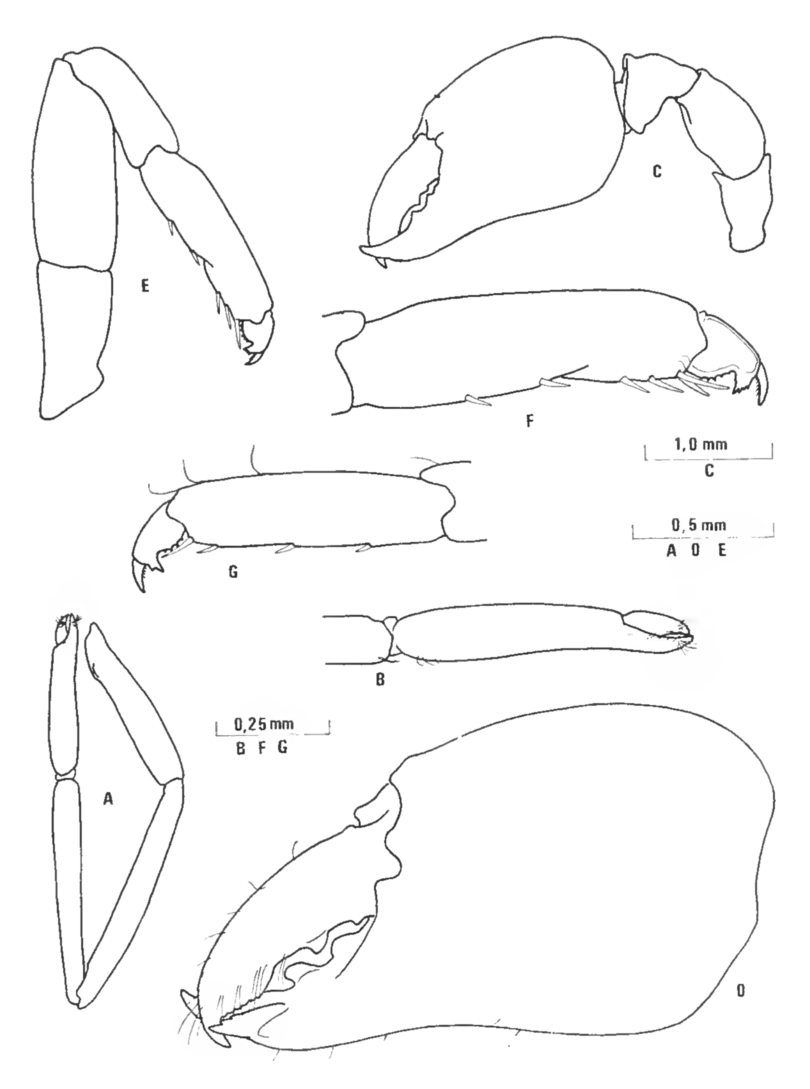



Fig. 3. — *Onycocaris aualitica* (Nobili) ♂, lectotype.
A, first pereiopod ; B, chela of first pereiopod ; C, second pereiopod ; D, chela of second pereiopod ; E, third pereiopod (?) ; F, propod and dactylus of third pereiopod ; G, propod and dactylus of fifth pereiopod (?).

carpus is 0.6 times the length of the propod and is unarmed. The merus is 2.3 times longer than wide and subequal to the propod. The ischium is about 0.8 times the length of the merus. The carpus, merus and ischium are all devoid of spines. The (?) fifth pereiopod is similar to the fourth but generally more slender. The dactylus is about 2.3 times longer than its basal width. The unguis bears four small proximal spinules. The accessory tooth bears two acute teeth only and the convex proximal border is armed with four small acute teeth. The propod is about 4.0 times longer than wide. The disto-ventral angle bears a single spine, with three shorter spines present along the ventral margin.

The telson is similar to that of the female but with two marginal dorsal spines present on the left side and a single dorsal spine present, in an intermediate position, on the right. The posterior telson spines are closely similar to the female.

The uropods are also closely similar to the female. The basipodite is unarmed. The lateral border of the exopod is entire, feebly convex, terminating distally in a small acute tooth with a mobile spine proximally.

Types : The male specimen, which is better preserved and less distorted than the female, is selected as the lectotype specimen.

## Discussion

The re-examination of the type specimens enable some dubious points concerning *Onycocaris aualitica* (Nobili) to be cleared up. Most of the confusion concerning this species has arisen from Nobili's statement about the uropods, " dont les bords sont finement denticulés ". It can now be confirmed that the lateral borders of the exopods of the uropods in both male and female are entire and without any trace of denticulations. As noted above, the female specimen appears to have been preserved dried and pinned as an entomological specimen. It was presumably in this state when examined by Nobili. This treatment has resulted in the fifth pair of pleopods being extended posteriorly so that they lie alongside and ventral to the exopod of the uropod. As they are devoid of setae, the lateral borders do present a finely denticulated appearance, more or less in the normal positions of the exopod of the uropod.

Nobili also reported that the scaphocerite completely lacked a terminal spine. It is true that this spine is lacking in the female specimen, but its absence appears to be due to abrasion rather than natural causes. In the male specimen the disto-lateral spine of the scaphocerite is quite distinct, although short. It may be noted also that the absence of a disto-lateral spine on the basal segment of the antennular peduncle in the female, which is well developed in the male, is probably also due to abrasion.

Comparison of Nobili's specimens with the description given by Fujino and Miyake (1969) of *Onycocaris oligodentata*, from Kyushu, Japan, shows that this species is very closely related to, if not synonymous with, *O. aualitica*. The small differences present in the details of the spinulation of the dactyls of the ambulatory pereiopods may probably be due to either individual or geographical variation. However, due to the fragile nature of Nobili's specimens, the mouthparts were not dissected out for examination and cannot therefore be compared with those of *O. oligodentata*, which have been fully described and illustrated by Fujino and Miyake.

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